WrkPln Work Plan: attachment 5
Real-time Groundwater Level Monitoring Network

The geographic scope, maps, specific purpose, goals and objectives of the proposed project are described in the previous section, *Project Description (attachment 4)*. The specific purpose, goals, and objectives related to groundwater management and implementation of the GWMP and IRWMP are also described in the previous section *Project Description (attachment 4).* However, for ease of use in the BMS system, they are also repeated here.

Project Purpose, Goals, and Objectives:
The establishment of this real-time groundwater level monitoring network supports the District's groundwater management plan (GWMP) goals and objectives. The GWMP includes basin management objectives on page 1. A more detailed description of the basin management objectives is presented on pages 12 through 17 of the GWMP. The primary goal of the GWMP to *"maintain and enhance local groundwater quantity and quality, resulting in a reliable groundwater supply for beneficial uses and avoidance of adverse subsidence"* is directly supported by this program. This proposed real-time groundwater level monitoring network will provide definite and achievable quantities of foundational data, on which the District and its regional partners can make appropriate planning decisions. Specific objectives supported by this program include;

- Increase hydrologic data relevant to conjunctive use opportunities
- Minimize the long-term drawdown of groundwater levels
- Facilitate groundwater replenishment and cooperative water management projects
- Support the IRWMP foundational actions program
- Work collaboratively with and understand the goals and objectives of entities engaged in groundwater management in surrounding areas
- Develop innovative and cost effective techniques with which to monitor the status of the groundwater basin

Proposed Tasks
Tasks for the proposed Real-time Groundwater Level Monitoring Network project include:

- Task 1: Installation of approximately ten additional real-time groundwater remote terminal units (RTUs) that include water level sensors strategically located on two east-west and two north south transects through its service area.
    - Review and refinement of site selection criteria

- Evaluate and prepare budgets for approximately ten wells for monitoring
- Prepare and manage well owner agreements
- Enroll selected wells into the project
- Procure hardware for installation
- Install and configure hardware for remote groundwater level sensing
- Commission site including manual quality control procedures
- Configure SCADA software to accept and display incoming data
- Document and prepare a final installation report including an inventory of equipment used, labor budget, and photo documentation of installed sites

- Task 2: Establishment of a publicly accessible web-site that will allow for real-time posting and viewing of collected monitoring data (dissemination of data to the public, stakeholders, agencies, and other interested parties).
  - Define technical requirements of desired website (including the ability to "push" data from a secure SCADA environment, to a public access environment)
  - Refine and sign contract with website developer
  - Work with contractor to develop the look and feel of the new website
  - Commission and maintain new website
  - Prepare a final website development report

- Task 3: Analysis of the data in order to gain insight into the region's groundwater behavior and to guide the further development of the District's active management conjunctive use program. The analysis of the data will include the establishment of an appropriate "multi-station groundwater level index".
  - In coordination with the WRA Technical Committee, District staff will on at least a bi-monthly period formally document their observations from the real-time data. Special attention will be paid to specific events such as charging up of the canal system, groundwater pumping in near proximity to site locations, and winter flows in Cache Creek.
  - At the end of the first and second year of the program, the District will host a "data review" meeting among all interested parties to review District staff's findings and observations. These meetings will be documented in both the first year and end of project reports.
  - Working with local groundwater managers as well as expert consultants, the District will lead the development of a "multi-

station groundwater level index". Consideration and weight will be given to those site locations that are determined to show a more representative view of the underlying aquifer.

Strategy for evaluating progress and performance

At the end of each quarter, the status of each task and sub-task will be compared to the proposed budget and schedule (table 2 and table 4). Each task and sub-task will be evaluated if it is on schedule and on budget. If so, the project will be considered making good progress and performance and this will be reported in the grant report. If certain tasks are falling behind, the strategy will be adjusted and this will also be reported. Minor adjustments include adjusting the schedule, adding more staff time, or asking for help from the water community or DWR. Major adjustments in strategy are not anticipated at this time, but will be fashioned to respond to specific conditions as they arise.

Access to private property

The District has a long history of access to private property (within the District) for the purpose of monitoring groundwater. Starting in the 1950's and continuing today, District staff visit 165 private wells each spring and fall to measure groundwater levels. This group of 165 volunteer landowners is our base group to ask for additional participation in other studies, such as groundwater quality monitoring. Recently, participants have allowed the District access to 25 private wells for one study from 2004 to 2007 and for another study in 2011 we gained access to 20 wells. The participation from the 2004-2007 water quality study is presented below (Table 1). In general, Yolo County landowners recognize the importance of groundwater and are willing to participate in monitoring programs, such as our proposed Real-Time Network.

Table 1. Response from Letter to Well Owners Currently Participating in the District Water Level Monitoring Program Requesting Permission to Sample for Water Quality

Description	**Number**	**Percentage**
No response	67	47%
Responded positively, would like to participate	69	48%
Undecided	3	2%
Does not want to participate	2	1%
Wells not useable for water quality sampling	2	1%
Total letters sent requesting permission to sample	143	100%

Additional wells not in the District water quality sampling network that are willing to participate (i.e., located in areas of interest to the study)	21
District water level network wells willing to participate	69
Total number of well owners willing to participate	90

CEQA and environmental compliance

The District is committed to compliance with all environmental laws and regulations, including the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA) and other environmental requirements, such as the state and federal Endangered Species Acts, Sections 401 and 404 of the federal Clean Water Act and the National Historic Preservation Act.

The tasks to be conducted under the proposed project constitute basic data collection and resource evaluation activities that will not result in serious or major disturbances of environmental resources. Monitoring and assessment are generally categorically exempt under NEPA and CEQA.

Project deliverables

1. A publicly accessible website displaying real-time groundwater level data for the area.
2. Quarterly Progress Reports.
3. Final Report including description and guide to the "multi-station groundwater level index"